

Goggle-Based Visual Field Device

Completed Technology Project (2017 - 2019)



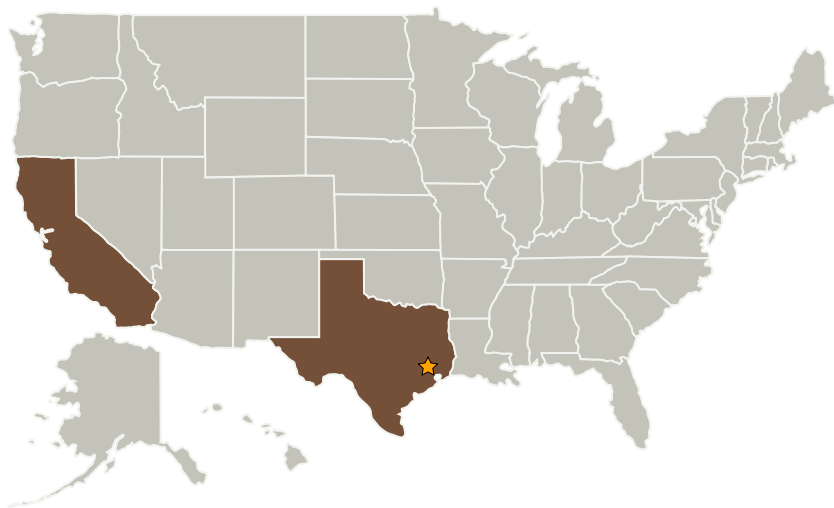
Project Introduction

This project is currently (1) developing a novel, ultra-small footprint VF device for use during expeditionary spaceflight (FY18-19), and in FY19 proposes to (2) complete clinical validations to ensure performance is comparable to large-scale COTS VF devices and (3) complete initial operational testing. This device is intended to detect, monitor progression, and guide medical intervention of severe SANS cases during long-duration missions, as well as detect neuro-ocular pathology near the battlefield, aboard U.S. Navy ships, and during humanitarian missions. It will transition into space and terrestrial usage in FY20-21.

Anticipated Benefits

It's been discovered that all - or nearly all - long-duration crewmembers present with one or more signs of Spaceflight Associated Neuro-ocular Syndrome (SANS; formerly VIIP). No small-footprint devices exist to test the impact of SANS on crewmember visual performance during expeditionary spaceflight. Visual field (VF) testing is a well-established, non-invasive test used to assess the effect of neurological pathology on visual function.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
★ Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Air Force(USAF)	Supporting Organization	US Government	Washington, District of Columbia
Naval Medical Research Unit Dayton	Supporting Organization	US Government	Dayton, Ohio
Translational Research Institute for Space Health(TRISH)	Supporting Organization	Academia	Houston, Texas
Web Vision Technologies	Supporting Organization	Industry	

Co-Funding Partners	Type	Location
Department of Defense(DoD)	US Government	Washington, District of Columbia

Primary U.S. Work Locations	
California	Texas

Project Website:

https://www.nasa.gov/directorates/spacetech/innovation_fund/index.html#.VC

Organizational Responsibility**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Center Innovation Fund: JSC CIF

Project Management**Program Director:**

Michael R Lapointe

Program Manager:

Carlos H Westhelle

Principal Investigators:

William J Tarver

Tyson J Brunstetter

Co-Investigator:

Tyson J Brunstetter

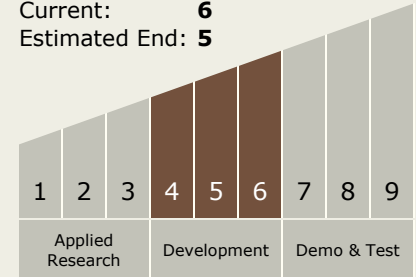
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Technology Maturity (TRL)

Start: **4**
Current: **6**
Estimated End: **5**



Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.3 Human Health and Performance
 - └ TX06.3.1 Medical Diagnosis and Prognosis

Target Destinations

Earth, The Moon, Mars